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AUTHOR Lauritzen, Paul
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ABSTRACT

This paper presents a methodology for assessing the teacher shortage in special education. The approach analyzes data on newly hired teachers from four categories: teachers trained out of state, experienced teachers returning or transferring, teachers newly trained in-state, and teachers on newly issued emergency licenses. These data can be obtained from a state certification/employment computerized data file. States can determine their personnel needs by examining the total number of new hires from the previous year and using that number to project needed personnel. The teacher shortage can then be ameliorated by increasing the availability of new hires. The model outlines factors which impact on the recruitment of personnel, reasons for the shortage of teachers in special education, and strengths and limitations of this approach to projecting personnel needs. (JDD)

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The Measurement of Personnel Needs in Special Education

Paul Lauritzen, Ph.D.
Professor of Special Education
Director, Federal CSPD Assessment Project
University of Wisconsin-Whitewater
Winther Hall
Whitewater, WI 53190

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NATIONAL CLEARINGHOUSE FOR PROFESSIONS IN SPECIAL EDUCATION
The Supply/Demand Analysis Center
The Council for Exceptional Children
1920 Association Drive • Reston, Virginia 22091
703/620-3660 SpecialNet: PROFESSIONS

FEDERAL CSPD ASSESSMENT PROJECT
University of Wisconsin-Whitewater
Whitewater, Wisconsin 53190
414-472-5378

Principal Investigator
Dr. Paul Lauritzen

THE MEASUREMENT OF PERSONNEL NEEDS IN SPECIAL EDUCATION

Introduction

The field of special education faces a growing shortage of teachers nationwide. Legislative bodies at the federal level have expressed concern about this problem by requesting from the Office of Special Education accurate data on the current and projected teacher shortage in programs educating children with disabilities.

This paper serves to present and discuss a model that provides a methodology for assessing the teacher shortage in special education. This approach is based on a careful analysis of new hires (all the teachers newly hired by a state in special education for a given year). The procedure is data efficient in that only four categories of information are used to determine the projected teacher needs. The information can be easily obtained if a state has a complete certification/employment computerized data file.

The four general areas that represent the possible sources of new hires are shown in Figure 1.

FIGURE 1

SOURCES OF NEW HIRES

Teachers Trained Out-of-State	Experienced Teachers Returning or Transferring	Teachers Newly Trained In-State	Teachers On Newly Issued Emergency Licenses*

* There are many terms used to identify teachers who are certified in a field different from the one in which they are teaching. This paper will refer to this type of approval as emergency licenses.

The proportion of teachers in each of these categories will vary considerably from one state to another. As an example, only about 10% of Wisconsin's new hires are prepared in out-of-state programs while in other states this percentage is several times higher.

The answer to the teacher shortage in any one state is to increase the availability of new hires from one or more of the first three sources listed in Figure 1. The last source (emergency licenses) is also a potential pool of new hires, but cannot be considered a solution to the teacher shortage since these teachers are not fully prepared for their field.

Advantages of the Model to Assess Personnel Needs

The procedures used to assess personnel needs discussed in this paper are designed to be accurate and data efficient. This is important for cost effectiveness and acceptance by the state education agencies (SEAs) who choose to implement the model.

The use of new hires as the measure of each state's identified teacher need is market generated. Some of the many variables reflected in market needs include attrition, retirement, pupil/teacher ratios, economic impact on education funding and certification standards. By using each state's identified teacher needs the state's right issue is avoided (state's right to determine its own educational policy, rules, and procedures).

An alternative to this approach is to use a projected incidence of each handicapping condition based on the state's pupil population. This approach is not considered since factors such as criteria for identification of handicapping conditions and service delivery models would have to be determined.

The procedures must be flexible to adapt to the various program delivery systems that are unique to the states. Factors such as geographical isolation, pupil/teacher ratios, and differences in certification standards must be accomodated.

The procedures must be accurate while maintaining data efficiency. The data points needed to apply the procedures must not be so complex that they are cost prohibitive to implement. States with a simple, well-planned data base can easily assess their personnel needs with the procedures presented.

The Projection of Personnel Needs

The states that follow the model in Figure 2 can increase their supply of new teachers by addressing the first three sources of new hires. The manipulation of the variables that affect these sources provides a state the opportunity to reduce or eliminate the teacher shortage.

FIGURE 2

THE PROJECTION OF PERSONNEL NEEDS

Total of New Hires − (New Hires From Out-of-State + Experienced Teachers Returning or Transferring + Teachers Newly Trained In-State) = Number of Additional Teachers Needed

The total number of new hires calculated on a yearly basis appears to be the best measure of personnel needs. When program growth or decline occurs on a consistent basis, projection for future years can be corrected by applying regression procedures. The special education program size has been relatively stable in most states for the past several years. Based on this stability the number of new hires from the previous years can be used to project the needed personnel in most states.

Number of Additional Teachers Needed

Unfilled personnel needs occur when all the sources of qualified new hires cannot collectively provide enough teachers to fill existing vacancies. The Federal Law P.L. 94-142 (The Education of All Handicapped Children Act) mandates that each child with a qualifying handicapping condition be placed in an appropriate educational program within a set time period. Thus, when districts cannot find qualified teachers they are still mandated to fill these positions for eligible handicapped children who cannot be appropriately placed in general education. Most states have a policy which permits the hiring of teachers not certified in special education after making a reasonable search for a qualified teacher. These out-of-field trained teachers are usually given an emergency license which permits them to teach for a limited period (typically one year) with continuation of the license contingent upon obtaining a prescribed amount of yearly training in special education . Some states are even licensing individuals who have not received any preparation in the field of education.

Thus, in Figure 2, the number of additional teachers needed would in probability be the same as the number of teachers newly employed on emergency licenses for that year. This suggests that the best single measure of the additional qualified teachers needed by a given state is the number of new emergency licenses issued for that year.

Teachers Trained Out-of-State

The teachers who are trained in other states can be a considerable source of qualified new hires. This proportion varies considerably. Wisconsin obtains only 10% of its new hires from out-of-state while in other parts of the country this percentage can exceed 50%. Many different factors seem to account for this variability. These include reciprocity in certification, minimal certification standards, attractive climate, progressive educational system, salary, and family unity. There is only limited information currently available to explain all the factors determining why teachers relocate to other states.

A partial explanation of this mobility can be considered based on the minimal research available. Experienced teachers (usually older and married) generally move based on the primary wage earner relocating to another state. The most mobile are inexperienced teachers, the recent graduates who are not likely tied to family commitments. Salary and climate can be factors in attracting teachers. States with large urban areas or isolated geographical areas may have difficulty keeping teachers in these areas.

There are several reasons that may make recruitment of out-of-state teachers a less than fully acceptable approach to addressing the teacher shortage problem. The teachers with the most mobility to locate in new states are this year's newly trained teachers. Yet this age grouping (under 30) have the highest attrition rate of all teachers. Also, with most of the states needing qualified special education teachers, the recruitment from other states only increases the problem in another geographical area. Lastly, the different service delivery systems and certification standards may make out-of-state prepared teachers not as qualified as those trained for each state's special education program. Some states are currently very dependent on teachers trained in other states to fill existing vacancies. Teachers prepared in other states will continue to remain a necessary and viable source of qualified new special education personnel for these states.

Experienced Teachers Returning or Transferring

Returning or transferring experienced teachers is probably the current largest source of new hires for some states (Michigan, Wisconsin). This is somewhat a result of the declining number of new teachers being prepared. This category of new teachers needs to be defined to include qualified teachers who return after an absence from teaching and those who move from general education into special education. Also included would be teachers who transferred from one special education certification category to another in which they were qualified. Excluded would be those teachers who were reassigned by moving from one district to another within the state as long as they remained teaching in the same certification category.

The limited preliminary research in this area suggests the main reason these teachers return to the field is economic in nature. Other factors were the enrollment of their young children into school and a desire to return to a challenging profession. Data suggests that this older pool of teachers is very restricted geographically. Comprehensive research is currently investigating the factors that restrict as well as invite this pool of teachers to return to the field of education.

Teachers Newly Trained In-State

Newly prepared teachers provide a necessary source of teachers. The importance of this source is that it will contribute, in time, to the experienced teachers pool, as well as provide immediate new hires. This is the only source of new teachers which can be effectively increased that will result in the reduction of the need to hire unqualified teachers.

The difficulty of using the number of newly prepared teachers alone to project the supply of personnel available to fill open positions is that a large proportion of these new trainees do not actually secure employment in the state that prepared them. Some leave the state to teach, others rear children or work outside the field of education. When projecting the availability of newly prepared personnel, this initial attrition must be corrected by using only the proportion of newly prepared teachers who secure teaching positions in their state. The proportion of newly trained teachers available is obtained by dividing the total number of newly trained teachers who secure employment in the state special education programs by the total number of teachers trained in that certification category (See Figure 3).

FIGURE 3

PROPORTION OF NEWLY TRAINED TEACHERS

$$\frac{\text{Number of New Hires Trained in State Previous Year by Certification Category}}{\text{Number of Teachers Trained in the State Previous Year by Certification Category}} = \text{Proportion of Newly Trained Who Secure Teaching Positions In-State}$$

Addressing The Problem

The reasons for the shortage of teachers in special education need to be considered in finding a realistic solution to the problem. The large yearly decline in the number of special educators being prepared over the past several years is probably the most significant factor. Also the high attrition rate is a major factor contributing to this shortage. The fact that the field of special education is relatively new compared to general education results in the pool of experienced teachers not employed, yet interested in returning to education, being much smaller. Considering all these factors, the single most realistic long-term solution to the teacher shortage is to increase the number of new teachers being prepared. This would make available not only newly trained teachers for the state, but in time expand the source of new teachers for the experienced teacher pool. If many states adopt this approach, it would also result in the out-of-state pool being more available.

The second important approach to reduce the shortage of special education teachers is to reduce the high attrition rates. This will be a more complex problem since the quality of the teaching environment will need to be improved. The high attrition rate of young female teachers will in all probability remain high due to family commitments.

The Projection of Additional Needed Teacher Trainees

States that select to address the teacher shortage in special education by supporting procedures that will increase the number of teachers being prepared can follow a procedure that will give a projection of additional teachers needed. This can easily be done by relating the proportion of newly prepared teachers who secure teaching positions to the needed additional teachers as determined by the number of newly issued emergency licenses in that certification category. By simply dividing the number of emergency licenses issued the previous year by the proportion of newly prepared teachers who secure teaching positions in the state, the number of additional teachers trained above current levels will be obtained. A graphic presentation of this model is shown in Figure 4. This approach will not project the number of additional teachers needed unless there is a shortage of teachers indicated by issuance of new emergency licenses.

FIGURE 4

PROJECTION OF ADDITIONAL NEEDED TEACHER TRAINEES

$$\frac{\text{Number of New Hires on Emergency License}}{\text{Proportion of Newly Trained Teachers Who Secure Teaching Positions In the State}} = \text{Additional Needed Teacher Education Graduates}$$

Rationale for Variables Included in the Model

The most frequently identified problem contributing to the shortage of teachers is the high attrition rate. Recent research in this area shows this to be a declining factor in the shortage of teachers. States that have accurate longitudinal data in this area show a steady decrease in the attrition rate. The higher attrition rate in special education can in part be attributed to the younger age of the teachers in this field. This fact will contribute to a continuing future decline of teacher attrition in special education.

The many factors that research has identified as relevant to teacher attrition (administrative support, raising a family, quality of preparation, curricular independence, etc.) in part reflect the support society provides public education. Considering this data, the total educational environment would need to be altered to further reduce attrition. The manipulation of this environment would require a change in our societal values which is not easily accomplished.

Another approach frequently considered to reduce the shortage of teachers is to increase the supply of experienced teachers returning to the field. It is well recognized that education is a female-dominated profession and many teachers tend to leave the field while caring for young children, returning as their family matures. This pool of experienced teachers makes up a considerable proportion of new hires in

many states. Several factors are clear considering this source of new hires. First, they are restricted geographically since the returning teacher is generally not the primary family wage earner. Second, certification changes can inhibit their re-employment. Third, increases in this pool of experienced teachers is dependent on the continued preparation of new teachers. These factors support the need for increased preparation of new teachers in special education.

Utilization of teachers trained out-of-state as a potential solution to shortages also presents difficulties. Certification standards are problematic unless states have reciprocity or unless a state has low certification standards. Individuals trained out-of-state may be unfamiliar with some service delivery systems. Additionally, teachers with the greatest mobility are young, newly trained teachers who also experience higher attrition rates. Finally, most states are experiencing personnel shortages, so that relocation of teachers does not represent a true solution to the problem.

Several standards relate to the shortage of teachers. To reduce the effect of these variables would only reduce the quality of education. These include reducing teacher certification standards and raising pupil/teacher ratios. The reduction of these standards was, therefore, not considered appropriate for this model.

Strengths of the Multi-Component Model

The strength of the multi-component approach to projecting personnel needs is that it provides the opportunity to approach the solution of the teacher shortage with procedures that fit a given state's potential for attracting teachers. This is very critical to states that secure the majority of their teachers from other states. This procedure also provides a more comprehensive picture of the sources of potential new hires. Once these procedures are developed utilizing the existing certification/employment file, they can be easily replicated on a yearly basis to update the information. An additional strength of this approach is that it requires four data points to accurately project its teacher needs.

Limitations of the Multi-Component Model

The recruitment of personnel from out-of-state may only increase the shortage of faculty in those states that have difficulty retaining them. An additional limitation is that the solution to the teacher shortage for some states cannot be resolved by simply increasing the number of teachers being prepared.

The low incidence handicapping conditions (visually impaired, hearing impaired, and severely handicapped) face unique problems in securing qualified teachers. The geographical isolation of the majority of these programs limits the availability of teachers who are restricted by family commitment. The problem cannot simply be resolved by preparing more teachers for these fields unless these new trainees have some tie to the area needing teachers. The answers to resolving the teacher shortage in low incidence areas are far more complex than in the high incidence conditions.

Conclusion

The information presented in this paper identifies the potential sources of teachers that could resolve the teacher shortage in special education. Continued research is needed on how to reduce teacher attrition, how to attract teachers back to the profession, and ways to increase the number of personnel training as special education teachers. Considering the decreasing numbers of newly trained special education teachers and the high attrition rate, it seems logical that efforts must be made to improve the teaching environment while also increasing the recruitment of new trainees. At present this model appears to be the most viable of the alternatives available to measure the critical shortage of teachers in special education.